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PRODUCTION OF CEMENTED CARBIDE  
MEMBER WITH DIAMOND COATING FILM

### Abstract:

**PROBLEM TO BE SOLVED:** To obtain a cemented carbide member excellent in peeling resistance by immersing a WC-base cemented carbide substrate formed in a required shape in an aq. alkali chloride soln., cleaning the surface of the substrate by electrolytic etching at a specified max. rate of removal for a specified time and forming a diamond coating film by a vapor phase synthesis method.

**SOLUTION:** The surface of the cemented carbide substrate is electrolytically etched at 0.2-1.5  $\mu\text{m}/\text{min}$  max. rate of removal for 3-30 min. The substrate is based on WC and contains 0.3-10 wt. (expressed in terms of carbides), in total, of one or more of carbides, nitrides or carbonitrides of Ti, Ta, Nb and V and preferably contains 2-10 wt.% Co and/or Ni. The concn. of the alkali chloride soln. is preferably 0.5-20 wt.%. Current density in the surface of the substrate is preferably 0.03-0.30 A/cm

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